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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/623,487	09/15/2000	Cheng-Le Zhao	196389US0PCT	7272

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EXAMINER

EGWIM, KELECHI CHIDI

ART UNIT	PAPER NUMBER
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1713

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DATE MAILED: 04/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/623,487

Applicant(s)

ZHOA ET AL.

Examiner

Dr. Kelechi C. Egwim

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it is not limited to a single paragraph. The language should be clear and concise and should avoid using phrases which can be implied, such as, "The present invention provides," etc.

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 9-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to

Art Unit: 1713

whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 9 recites "0.1 to 1.5% by weight of itaconic acid", and the claim also recites "up to 50% by weight of the itaconic acid [may] be replace by another monomer having at least on acid group" which appears to be a narrower/different statement of the range/limitation. It is unclear what content of itaconic acid per the total copolymer P is being required by the claim.

5. The term "it being possible" in line 7 of claim 9 further makes the requisite copolymer composition indefinite since it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

6. The term "if desires" in the second-to-the-last line of claim 9 also renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

7. The remaining claims 10-17 depend from claim 9 and therefore incorporated its indefiniteness.

8. In claim 13, line 2, the term "obtainable" renders the claim indefinite because it is unclear if applicant is requiring for the aqueous dispersion of copolymer P to be **obtained** by the recited process or merely reciting **one of the possible** preparation methods within the scope of the claim that is optional.

Also, in line 3-4, claim 13 recites the broad recitation "at least 50% . . . of the itaconic acid is present in the monomer feed", and the claim also recites "in particular all of the itaconic acid is present in the monomer feed", which is the narrower statement of the range/limitation.

9. Claim 14 recites that the copolymer P of claim 13 (which is defined by claim 1) be prepared "in at least two polymerization stages, where the composition of the monomers to be polymerized in the 1st stage is different from that of the monomer mixture of the monomers to be polymerized in the 2nd stage." However, in claim 1, applicant recites a single Tg range for copolymer P. If the copolymer P is produced from at least two different monomer compositions in at least two different stages as recited in claim 14, the product copolymer would actually be a composite or core/shell type polymer (composite of two different polymers--one from each stage) and the different polymers making up the composite or core/shell type polymer **would necessary have two different Tg's**. It is unclear what applicant means to define with the single recited Tg range for copolymer P if the copolymer is actually a composite of at least two different polymers **that would have at least two different Tg's**.

10. While applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947). The term "pigment volume concentration" in claim 15 is used by the claim to define "the ratio of inorganic components to copolymer P," while the accepted meaning is "the pigment (or filler) **binding capacity** of polymer particles in a coating composition." The "pigment volume concentration" is ultimately a function of the monomer units in the polymer and does not define the content of pigment in the coating or the ratio of pigment to polymer. The claimed "ratio" is indefinite.

11. Claims 16 and 17 provide for "the use of a copolymer as defined in claim 9 as a binder" in a coating composition, but, since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim Rejections - 35 USC § 101

12. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

13. Claims 16 and 17 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App.

Art Unit: 17.13

1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

15. Claims 9-11 and 13-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Plamondon et al. (USPN 4,107,120).

In col. 1, lines 9-11, col. 2, lines 10-15, col. 6, lines 45-60, col. 8, lines 15-18, col. 9, lines 40-49 and the examples, Plamondon et al. teach back-coating or finish coat compositions comprising emulsion latex polymer binders comprising a multistage polymer having Tg's from +60 °C and lower, which contain in polymerized form:

- a. up to about 2%, based on the total monomer composition weight, of a "latent crosslinking monomer" exemplified by itaconic acid;
- b. preferably at least 70% of alkyl (meth)acrylate esters;
- c. wherein no acrolein is required; and

wherein the compositions may further comprise pigments (exemplified by titanium dioxide) and other customary auxiliaries.

Thus, the requirements for rejection under 35 U.S.C. 102(b) are met.

16. Claims 9-11 and 13-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Baumstark et al. (USPN 5,905,114).

In col. 3, lines 57-65, col. 6, lines 6-13, col. 7, lines 52-66 and claims 1-3 and 18-20, Baumstark et al. teach coating compositions comprising emulsion polymer binders, which may be prepared in a multi-step process, comprising a polymer having minimum film forming temperatures (MMFT--related to transition temperature) less than 10°C, which contain in polymerized form:

- a. up to 1 part by weight, based on the total monomer composition, of an acid monomers such as itaconic acid; and
- b. the balance being the combination of monomers such as alkyl (meth)acrylate ester and vinyl-aromatic monomers;

wherein the compositions may further comprise pigments (typically titanium dioxide) and other customary auxiliaries.

Thus, for the overlapping Tg/MMFT, the requirements for rejection under 35 U.S.C. 102(e) are met.

17. Claims 9-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Fölsch et al. (USPN 5,468,800) or Désor et al. (EP 709 441)

In col. 2, lines 12-18, col. 3, lines 41-50, col. 4, lines 5-29 and 48-52 and col. 5, lines 20-33, Fölsch et al. teach coating agents comprising emulsion polymer binders, optionally produced in multiple stages, comprising a polymer having dynamic softening temperatures (related to transition temperature) ranging from -20 to +20 °C, which contain in polymerized form:

- a. 0.1 to 5%, based on the total monomer composition weight, of a crosslinking monomer such as itaconic acid;
- b. 1 to 20% of urea group containing monomers;
- c. at least 60% of monomers such as alkyl (meth)acrylate esters, vinyl esters and styrene;
- d. wherein no acrolein is required; and

wherein the compositions may further comprise pigments (small genus of inorganic and organic pigments) and other customary auxiliaries.

In col. 1, lines 5-10, col. 2, lines 25-67, col. 3, lines 6-11, col. 4, lines 48-65 and col. 5, lines 6-12 of US 5,681,880, which is the English translation of EP 709 441, Désor et al. teach coating compositions comprising emulsion polymer binders, optionally

Art Unit: 1713

produced in multiple steps, comprising a polymer having preferable minimum film forming temperatures ranging from 0°C to +50 °C, which contain in polymerized form:

- a. 0.3 to 10%, based on the total monomer composition weight, of an acid monomer such as itaconic acid;
- b. 0 to 20% of wet adhesion monomers such as uredo (urea) group containing monomers;
- c. 70 to 99.7% of monomers such as alkyl (meth)acrylate esters, vinyl esters and styrene;
- d. wherein no acrolein is required; and

wherein the compositions may further comprise pigments such as titanium dioxide and other customary auxiliaries.

Thus, for the overlapping composition and Tg, the requirements for rejection under 35 U.S.C. 102(b) are met.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1713

19. Claims 9-17 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, 35 U.S.C. 103(a) as being unpatentable over Knutson (USPN 5,118,749) or Farwaha et al. (USPN 5,455,298) for reason cited below.

In col. 3, lines 8-45, col. 4, lines 24-56, col. 9, lines 8-31 and col. 10, lines 1-9, Knutson teaches emulsion paints comprising polymer binders that contain in polymerized form:

- a. 0.1 to 10%, based on the total monomer composition weight, of an acid monomer such as itaconic acid;
- b. 0.1 to 5% of wet adhesion monomers such as urea group containing monomers;
- c. preferably more than about 75% of alkyl (meth)acrylate esters;
- d. wherein no acrolein is required; and

wherein the compositions may further comprise pigments (exemplified by titanium dioxide) and other customary auxiliaries.

In col. 3, lines 6-32 and 55-65 and col. 5, lines 23-28, Farwaha et al. teach pigmented coatings comprising emulsion polymer binders which contain in polymerized form:

- a. 1 to 3%, based on the total monomer composition weight, of an acid monomer such as itaconic acid;
- b. 0.2 to 2.0% of wet adhesion monomers such as uredo (urea) group containing monomers; and

Art Unit: 1713

c. the balance of alkyl (meth)acrylate esters or styrene monomers; wherein the compositions may further comprise pigments, such as titanium dioxide, and other customary auxiliaries.

While Knutson or Farwaha et al. do not expressly teach the Tg's of the binder polymers in their coating compositions, it is reasonable that the Tg's of the binders in Knutson or Farwaha et al. would inherently possess the presently claimed Tg's since the Tg's of the polymers are determined by the choice and weight ratio of monomers used to prepare the polymers and, for the overlapping composition, the polymers of Knutson or Farwaha et al. have essentially the same composition as the claimed binder polymers. The USPTO does not have at its disposal the tools or facilities deemed necessary to make physical determinations of the sort and, in any event, an otherwise old composition is not patentable regardless of any new or unexpected properties. In re Fitzgerald et al, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112 - § 2112.02.

Even if assuming that the prior art references do not meet the requirements of 35 U.S.C. 102, it would still have been obvious to one of ordinary skill in the art, at the time the invention was made, to arrive at the same inventive composition because the disclosure of the inventive subject matter appears within the generic disclosure of the prior art.

Art Unit: 1713

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kelechi C. Egwim whose telephone number is (703) 306-5701. The examiner can normally be reached on M-T (7:30-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (703) 308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

A handwritten signature in black ink, appearing to be 'KCE', with a long diagonal line extending from the end of the signature towards the top right.

KCE
April 17, 2002